

CLAIMS

1. Method of signal processing for a spread spectrum
digital radiocommunication receiver, comprising the
5 following steps:

- determine a propagation profile of a propagation
channel between sending means and the receiver,
including at least one propagation path associated
10 with a reception energy;
- measure data relating to an energy distribution in
the propagation profile;
- 15 - estimate information symbols carried by a signal
received originating from means of sending over
the propagation channel, by applying to said
signal a processing taking into account a
predetermined maximum number of propagation paths,
20 said propagation paths taken into account being
chosen according to a criterion selected from
several criteria,

in which said criterion is selected as a function of
25 the measured data relating to the energy distribution
in the propagation profile.

2. Method according to Claim 1, in which the step of
determining a propagation profile of a propagation
30 channel between sending means and the receiver
comprises a processing applied to the signal received
identifying, on the basis of an analysis of an impulse
response of the propagation channel between the sending
means and the receiver, a number of propagation paths
35 detected and respective reception energies for these
paths.

3. Method according to Claim 1, in which said
propagation paths taken into account are chosen

according to a criterion selected from a set comprising a first criterion according to which the predetermined maximum number of propagation paths of greatest energy on average are taken into account, and a second
5 criterion according to which the predetermined maximum number of propagation paths of largest instantaneous energy are taken into account.

4. Method according to Claim 1, in which the measured
10 data relating to the energy distribution in the propagation profile comprise a measurement of energy dispersion for the propagation paths detected.

5. Method according to Claim 4, in which the
15 selection of said criterion as a function of the measured data relating to the energy distribution in the propagation profile comprises a comparison of said measurement of energy dispersion for the propagation paths detected with a threshold.

20 6. Method according to Claim 5, in which said threshold is obtained in relation to a prior choice of a gap in performance between two strategies for choosing propagation paths taken into account in said
25 processing according to respective criteria.

7. Method according to Claim 6, in which the
30 obtaining of the threshold is done on the basis of correspondences between an energy dispersion in a propagation profile and a gap in performance between two strategies for choosing propagation paths according to respective criteria, the correspondences being preestablished under various radio conditions.

35 8. Method according to Claim 4, in which the measurement of energy dispersion for the propagation paths detected comprises an estimation of a mean energy gap between the propagation paths detected.

9. Method according to Claim 8, in which the mean energy gap between the propagation paths detected is estimated in the least squares sense.

5 10. Method according to Claim 8, in which the mean energy gap between the propagation paths detected is estimated according to an arithmetic mean of ratios between the energies of consecutive paths from among the propagation paths detected.

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11. Spread spectrum digital radiocommunication receiver comprising means for determining a propagation profile of a propagation channel between sending means and the receiver, including at least one propagation
15 path associated with a reception energy, means for measuring data relating to an energy distribution in the propagation profile, means for choosing a predetermined maximum number of propagation paths according to a criterion for choosing, means for
20 estimating information symbols carried by a signal received originating from means of sending over the propagation channel, by applying to said signal a processing taking into account the paths chosen, said spread spectrum digital radiocommunication receiver
25 furthermore comprising means for selecting a criterion for choosing from several criteria, designed to select a criterion for choosing as a function of the data measured by the means relating to the energy distribution in the propagation profile.

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12. Receiver according to Claim 11, in which the means for determining a propagation profile of a propagation channel between sending means and the receiver comprise means for applying to the signal received a processing
35 identifying, on the basis of an analysis of an impulse response of the propagation channel between the sending means and the receiver, a number of propagation paths detected and respective reception energies for these paths.

13. Receiver according to Claim 11, in which the means
for selecting a criterion for choosing from several
criteria as a function of the measured data relating to
5 the energy distribution in the propagation profile are
designed to select a criterion for choosing from a set
comprising a first criterion according to which the
predetermined maximum number of propagation paths of
greatest energy on average are taken into account, and
10 a second criterion according to which the predetermined
maximum number of propagation paths of largest
instantaneous energy are taken into account.

14. Receiver according to Claim 11, in which the means
15 for measuring data relating to an energy distribution
in the propagation profile comprise means for measuring
an energy dispersion for the propagation paths
detected.

20 15. Receiver according to Claim 14, in which the means
for selecting a criterion for choosing from several
criteria as a function of the measured data relating to
the energy distribution in the propagation profile are
designed to make a selection which comprises a
25 comparison of said measurement of energy dispersion for
the propagation paths detected with a threshold.

16. Receiver according to Claim 15, in which the means
for selecting a criterion for choosing from several
30 criteria as a function of the measured data relating to
the energy distribution in the propagation profile are
designed to obtain said threshold in relation to a
prior choice of a gap in performance between two
strategies for choosing the propagation paths.

35 17. Receiver according to Claim 16, in which the means
for selecting a criterion for choosing from several
criteria as a function of the measured data relating to
the energy distribution in the propagation profile

comprise means for storing correspondences between an energy dispersion in a propagation profile and a gap in performance between two strategies for choosing propagation paths according to respective criteria, said correspondences being preestablished under various radio conditions.

18. Receiver according to Claim 17, in which the means for selecting a criterion for choosing from several criteria as a function of the measured data relating to the energy distribution in the propagation profile are designed to obtain the threshold on the basis of the correspondences stored in the means ~~(14)~~ for storing correspondences between an energy dispersion in a propagation profile and a gap in performance between two strategies for choosing the propagation paths according to respective criteria.

19. Receiver according to Claim 14, in which the means for measuring an energy dispersion for the propagation paths detected are designed to estimate a mean energy gap between the propagation paths detected.

20. Receiver according to Claim 19, in which the means for measuring an energy dispersion for the propagation paths detected are designed to estimate a mean energy gap between the propagation paths detected in the least squares sense.

21. Receiver according to Claim 19, in which the means for measuring an energy dispersion for the propagation paths detected are designed to estimate a mean energy gap between the propagation paths detected according to an arithmetic mean of ratios between the energies of consecutive paths from among the propagation paths detected.

22. Computer programme, loadable into a memory associated with a processor, and comprising

instructions for the implementation, during the execution of said programme by the processor, of the the followings steps :

- 5 - determine a propagation profile of a propagation channel between sending means and the receiver, including at least one propagation path associated with a reception energy;
 - measure data relating to an energy distribution in the propagation profile;
 - 10 - estimate information symbols carried by a signal received originating from means of sending over the propagation channel, by applying to the said signal a processing taking into account a predetermined maximum number of propagation paths,
 - 15 the said propagation paths taken into account being chosen according to a criterion selected from several criteria,
- in which said criterion is selected as a function of the measured data relating to the energy distribution
- 20 in the propagation profile.

23. Computer programme according to claim 22, in which the step of determining a propagation profile of a propagation channel between sending means and the

25 receiver comprises a processing applied to the signal received identifying, on the basis of an analysis of an impulse response of the propagation channel between the sending means and the receiver, a number of propagation paths detected and respective reception energies for

30 these paths.

24. Computer programme according to claim 22, in which said propagation paths taken into account are chosen according to a criterion selected from a set comprising

35 a first criterion according to which the predetermined maximum number of propagation paths of greatest energy on average are taken into account, and a second

criterion according to which the predetermined maximum number of propagation paths of largest instantaneous energy are taken into account.

25. Computer programme according to claim 22, in which
5 the measured data relating to the energy distribution in the propagation profile comprise a measurement of energy dispersion for the propagation paths detected.

26. Computer programme according to claim 25, in which
10 the selection of said criterion as a function of the measured data relating to the energy distribution in the propagation profile comprises a comparison of said measurement of energy dispersion for the propagation paths detected with a threshold.

15 27. Computer programme according to claim 26, in which said threshold is obtained in relation to a prior choice of a gap in performance between two strategies for choosing propagation paths taken into account in
20 said processing according to respective criteria.

28. Computer programme according to claim 27, in which the obtaining of the threshold is done on the basis of correspondences between an energy dispersion in a
25 propagation profile and a gap in performance between two strategies for choosing propagation paths according to respective criteria, the correspondences being preestablished under various radio conditions.

30 29. Computer programme according to claim 25, in which the measurement of energy dispersion for the propagation paths detected comprises an estimation of a mean energy gap between the propagation paths detected.

35 30. Computer programme according to claim 29, in which the mean energy gap between the propagation paths detected is estimated in the least squares sense.

31. Computer programme according to claim 29, in which the mean energy gap between the propagation paths detected is estimated according to an arithmetic mean
5 of ratios between the energies of consecutive paths from among the propagation paths detected.

32. Computer medium in which is recorded a programme comprising instructions for the implementation of the
10 followings steps, when executed by a processor :

- determine a propagation profile of a propagation channel between sending means and the receiver, including at least one propagation path associated with a reception energy;
- 15 - measure data relating to an energy distribution in the propagation profile;
- estimate information symbols carried by a signal received originating from means of sending over the propagation channel, by applying to the
20 said signal a processing taking into account a predetermined maximum number of propagation paths, the said propagation paths taken into account being chosen according to a criterion selected from several criteria,
- 25 said criterion being selected as a function of the measured data relating to the energy distribution in the propagation profile.